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EXAMINER	
KROFCHECK, MICHAEL C	

ART UNIT	PAPER NUMBER
2186	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/784,356	SUISHU ET AL.	
	Examiner	Art Unit	
	Michael Krofcheck	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-5,8-15 and 41-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,12,13,15 and 41-45* is/are rejected.

7)☒ Claim(s) *8-11,14,42 and 43* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *February 23, 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/23/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment filed on 1/19/06.

2. The specification and claims 1, 3-5, 8-15 has been amended.

3. Claims 16-40 have been cancelled.

4. Claims 41-45 have been added.

5. The objections/rejections from the prior correspondence not restated herein have been withdrawn.

Claim Objections

6. Claim 42-43 objected to because of the following informalities:

a. Relating to claims 42 and it is unclear of what the applicant is claiming with respect to the limitation of, *data and the update information which are not received by the third storage system but received by the second storage system before the failure*. Is it the applicant's intention to state that the data and update information are not received by the third storage system? or is it the applicant's intention to state that some of the data and update information are received and some are not by the third storage system?

b. The word, "system" should follow the last word of the claim 43.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 41 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

9. With respect to claim 41, it appears there is no support for the third storage system transmitting a read request to the first storage system. If the applicant believes this is not the case, the examiner requests the applicant to identify the location in the specification where support is found.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claim 43 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. With respect to claim 43, the examiner is confused to what the applicant is intending to claim. Is the applicant intending to claim the third storage system indicating what information it did not receive by the number it has? Is the number it has used to determine such or does the number directly indicate such?

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claim 1, 3-5, 12-13, 15, 41-45 rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al., US patent application publication 2003/0051111,

Hostetter et al., US patent application publication 2002/0133511, and Wahl et al., US Patent 6324654.

17. With respect to claim 1, Nakano teaches of a data processing system comprising: a first storage system that is configured to couple to a host device and configured to send and receive data to and from the host device (FIG. 5; paragraph 0061; paragraphs 0065 - 0066; where the host 1 transmits an instruction (data) to storage sub-system 1 (first storage system) and storage sub-system transmits a response back to host 1, showing that the storage sub-system 1 can send and receive data with the host 1);

a second storage system that is coupled to the first storage system and configured to receive data from the first storage system (FIG. 5; FIG. 1; paragraphs 0065 – 0066; paragraphs 0079 where the second storage sub-system exchanges data with the first storage sub-system through synchronous transmission showing that they are connected to each other and that the second storage sub-system can receive data from the first); and

a third storage system that is coupled to the first storage system and configured to receive data from the first storage system (FIG. 1; paragraph 0079; where the third data center or storage sub-system 3 and the first data center (storage sub-system 1) can exchange data through an asynchronous remote copying technique, therefore they are connected and the third center can receive data from the first),

wherein the first storage system includes a first storage area that is configured to store data written from the host device (FIG. 1; FIG. 2; paragraph 0100 – 0104; where

data received from the host is temporarily stored in the cache and then transferred to the hard disk drive (first storage area) located in the storage sub-system 1), and

a second storage area storing update information relating to a write order of the data (fig. 12-15; paragraphs 0193-0195; where the where for each block written in each storage sub-system, the correlation of block number and the sequence number provided in the data writing order is entered in the control memory)

the first storage system is configured to transmit the data to the second storage system synchronously with receiving the data from the host device, (FIG. 1, 2, 5, and 9; paragraph 0065 – 0067; paragraph 0079 – 0080; paragraph 0092; where when copying through the synchronous transfer of data is performed, the data in sub-system 1 constantly matches the data stored in sub-system 2. Thus the data transfer to the first and second storage sub-systems is synchronous) and

transmits to the third storage system asynchronously with receiving the data from the host device (FIG. 1, 9; paragraph 0079, paragraph 0081; paragraph 0092; where data center 1 receives updated data from the host and data center 3 located at a remote location receives the updated data using the asynchronous remote copying technique),

the second storage system includes a third storage area that is configured to store the data received from the first storage system (FIG. 1; FIG. 2; paragraph 0100 – 0107; paragraph 0078 – 0080; where the storage sub-system 2 contains a channel adaptor for the exchange of data by a host or remote copy destination (first storage system), a cache memory used for temporarily storing the data exchanged, and a hard disk drive (third storage area) where the data temporarily stored in the cache is written.

The data sent to the hard disk drive (third storage area) is from storage sub-system 1 from a synchronous transfer operation shown in FIG. 1), and

transmitting the update information relating to the write order of the data with the data to the third storage system in case of a failure of the first storage system (fig. 8, 12-15; paragraph 0137-0138, 0193-0195; where in an asynchronous transfer the data management information is attached to the data to be transmitted. This occurs in the asynchronous transfer when a blockage occurs in data center 1),

transmitting data and update information to the third storage system in case of failure of the first storage system (fig. 8, 12-15; paragraph 0138, 0193-195; when a disaster occurs at data center 1, data center 2 transmits the differential data to the data center 3 asynchronously. As the data is transmitted asynchronously it includes the write order information)

Nakano fails to specifically teach of a second storage area that is configured to store the data written from the host device and update information, transmit the data and the update information to the third storage system, a fourth storage area that is configured to store the data received from the first storage system and update information relating to the write order of the data in order to transmit the data and the update information stored in the fourth storage area to the third storage system, the third storage system includes a fifth storage area that is configured to store the data and the update information read from the second storage area, and a sixth storage area that is configured to store the data included in the fifth storage area according to the update information included in the fifth storage area.

However, Hostetter teaches of a second storage area that is configured to store the data written from the host device and update information relating to a write order of the data (fig. 2; items 52, 58; paragraph 0030-0031, where the bitmap/snapshot is used to signify the accumulated write commands, stored on the source volume, 52),

a fourth storage area that is configured to store the data received from the first storage system and update information relating to the write order of the data (fig. 2, 3; paragraphs 0030-0033; where the primary target volume (fourth storage area) receives a copy of the data file and a copy of the write command record from the source volume. It is abundantly clear to one of ordinary skill in the art that the primary target volume stores the data file and copy of the write command record as the source volume and primary target volume are synchronized (paragraph 0030))

However, Wahl teaches of the third storage system includes a fifth storage area that is configured to store the data and the update information, (fig. 1, 3; column 6, lines 41-57, column 7, lines 18-21; column 9, lines 12-40; where the writelog (fifth storage area) contains the data modified and the metadata header) and

the third storage system includes a sixth storage area that is configured to store the data included in the fifth storage area according to the update information included in the fifth storage area (fig. 1, 3; column 6, lines 41-57, column 7, lines 18-21; column 9, lines 12-40; where the local data device (sixth storage area) contains the updated data also stored in the writelog. As such the data stored in the local data device is stored in accordance with what is stored in the writelog).

Nakano and Hostetter are analogous arts as they are both in the same field of endeavor, redundant storage. It would have been obvious to one of ordinary skill in the art having the teachings of Nakano and Hostetter at the time of the invention to include the volumes containing the bitmap and the data file in Hostetter in each data center of Nakano, storing the sequence numbers and data block numbers of Nakano in the bitmap. Their motivation would have been to avoid the need to send the entire source volume and make the snapshot/bitmap copying and migration of data more efficient (Hostetter, paragraph 0029-00).

Thus, in the combination of Nakano and Hostetter, the data file and bitmap/sequence numbers stored in a volume in data center 1 (first storage system) are asynchronously transmitted to data center 3 (third storage system), as Nakano teaches of transmitting in that way (FIG. 1, 9; paragraph 0079, paragraph 0092).

Additionally, in the combination of Nakano and Hostetter, the data file and bitmap/sequence numbers stored in a volume in data center 2 (second storage system) are transmitted to the data center 3 in case of a failure of the data center 1, since Nakano teaches of transmitting in that way (fig. 8, 12-15; paragraph 0137-0138, 0193-0195).

The combination of Nakano and Holstetter, and Wahl are analogous arts as they are both in the same field of endeavor, redundant storage. It would have been obvious to one of ordinary skill in the art having the teachings of Nakano, Hostetter, and Wahl at the time of the invention to include the structure of the local data device and writelog of Wahl in each data center 3 of the combination of Nakano and Holstetter. Their

motivation would have been to ensure that the data stored in the hard drives set aside for data (versus hard drives for writelog information) can be brought up to date (by the writelog information) in the event to a system crash, Wahl column 3, line 45 – column 4, line 3.

Thus, in the combination of Nakano, Hostetter, and Wahl, the data and update information stored in the data center 3 has been received from the second storage area in the data center 1 as Nakano teaches of transmitting from data center 1 to data center 3 (fig. 1, 9, 12-15; paragraph 0079, paragraph 0092; 0193-0195; as the transmission is asynchronous, it includes the data block numbers and sequence numbers)

18. With respect to claim 3, Nakano also teaches of wherein the first storage system is configured to request, upon receiving from the host device a data write request to write data, the second storage system to write the data therein (FIG. 5; paragraph 0065 – 0066; where the host issues a data update instruction, write instruction, and the storage sub-system 1 receives the updated data from the host and transmits it to the storage sub-system 2 as a request to write the data), and

notify, after receiving a write response from the second storage system, the host device of a completion of the data write request (FIG. 5; paragraph 0065 – 0066; where after the data block has been written, the storage sub-system 2 notifies the storage sub-system 1 that the writing is complete via. a write-end status and the storage sub-system 1 subsequently notifies the host),

wherein the first storage system is configured to write in the first storage area the data written from the host device (FIG. 5; paragraph 0065 – 0066; where the data block

is received from the host by the storage sub-system 1 and a write-end is returned to the host signifying the completion of the writing. Since the storage sub-system 1 acknowledges that is wrote the data, it is obvious that it did write the data), and

writing update information relating to the write order of the data (fig. 12-13; paragraph 0193).

Nakano fails to specifically teach of writes in the second storage area the data written from the host device and the update information relating to the data. However, Hostetter teaches of writes in the second storage area the data written from the host device and the update information relating to the data (fig. 2; paragraph 0030).

19. With respect to claim 4, Nakano teaches of wherein the first storage system is configured to generate, upon receiving from the host device the data write request, an update number that is used for identifying the write order of the data (fig. 12-13; paragraph 0193; where the storage sub-system 1 generates a block number and sequence number for each block written in the data writing order).

Wahl teaches of wherein the first storage system is configured to generate, upon receiving from the host device the data write request, an update number that is used for identifying the write order of the data (FIG. 1; FIG. 3; column 7, lines 18 – 21; column 9, lines 12 – 40; where the device driver creates the metadata header for the data update after receiving a call to modify data on the data device. The header contains a global sequence number and a local sequence number which are used to ensure that the order of data entries in the writelog follows the sequence they are generated), and

includes the update number in a data write request that is sent to the second storage system (FIG. 1; FIG. 3; FIG. 5; column 7, lines 18 – 21; column 9, lines 29 – 40; column 10, lines 11 – 23; where the primary mirror daemon monitors the writelog device for data updates and sends them to the mirror device (the second storage system; sending data updates is the data write request for the mirror device) to be stored. The data updates contain a header for the updated data as created by the device driver that includes sequence numbers (update numbers). Therefore, the sequence numbers in the header are sent in a write request along with the updated data to the mirror device),

It would have been obvious to one of ordinary skill in the art having the teachings of Nakano, Hostetter, and Wahl at the time of the invention to include the device driver, and primary and remote mirror daemons from Wahl in the data centers of Nakano to aide in controlling data transfer processes, storing the sequence numbers in the bitmap of Hostetter. The motivation for this would have been to allow for the system to operate over multiple different network configurations and be compatible with varieties of disk storage devices (Wahl column 2, line 66 – column 3, line 8).

The combination of Nakano, Hostetter, and Wahl teaches of wherein the update information written in the fourth storage area of the second storage system includes the update number received from the first storage system. As the data center 2 of Nakano includes the primary target volume and bitmap from Hostetter and sequence numbers from Wahl stored in the volume, and Nakano teaches of transmitting from the first storage system to the second, it is abundantly clear to one of ordinary skill in the art that the update number are received from the first storage system.

20. With respect to claim 5, Nakano also teaches of wherein the second storage system is configured to write, upon receiving from the first storage system the data write request, in the third storage area the data received from the first storage system (FIG. 5; FIG. 2; paragraph 0065 – 0066; paragraph 0099 – 0104; where the data block is written in the one of the disk drives in storage sub-system 2 (third storage area) by the disk adaptor within the storage sub-system),

sending a write response to the first storage system (fig. 5, step 3).

Nakano fails to specifically teach of write in the fourth storage area the data received from the first storage system and the update information relating to the data. However, Hostetter teaches of write in the fourth storage area the data received from the first storage system and the update information relating to the write order of the data (fig. 2, 3; paragraph 0193-195).

As Nakano teaches of the write order information as previously cited, The combination of Nakano, Hostetter, and Wahl teach of the write order information being written in the fourth storage area.

21. With respect to claim 12, Nakano teaches of wherein the first storage system includes a plurality of first storage areas (fig, 1, 2; where the first storage sub-system has multiple hard drives).

The combination of Nakano, Hostetter, and Wahl teaches of wherein the update information written in the second storage area includes an update number used for identifying write order of data (as cited and explained previously) written in the plurality of the first storage areas (It is abundantly clear to one of ordinary skill in the art that

when a multitude of first storage areas are involved as opposed to a single one, that the bitmap/sequence numbers stored encompass all of the storage locations being mirrored).

22. With respect to claim 13, Nakano teaches of wherein the second storage system includes a plurality of third storage areas (fig, 1, 2; where the second storage sub-system has multiple hard drives).

The combination of Nakano, Hostetter, and Wahl teaches of wherein the update information written in the fourth storage area includes an update number used for identifying write order of data (as cited and explained previously) written in the plurality of the second storage areas (It is abundantly clear to one of ordinary skill in the art that when a multitude of first storage areas are involved as opposed to a single one, that the bitmap/sequence numbers stored encompass all of the storage locations being mirrored).

23. With respect to claim 15, the combination of Nakano, Hostetter, and Wahl teaches of wherein the update information written in the second storage area in the first storage system includes an update number that is generated by the first storage system to be used for identifying the write order of the data (Nakano, fig. 12-15; paragraph 0193-0195; where the storage sub-system 1 generates a sequence number and block number corresponding to the data writing order. The numbers are included in the second storage area in the combination of Nakano, Hostetter, and Wahl as previously cited),

the update information written in the fourth storage area in the second storage system includes the update number included in the update information written in the second storage area (Nakano teaches of asynchronous transmitting between storage sub-systems 1 and 2, fig. 6; paragraph 0068-0074; that includes the numbers), and

the update information written in the fifth storage area in the third storage system includes the update number included in the update information written in the second storage area ((Nakano teaches of asynchronous transmitting between storage sub-systems 1 and 3, fig. 7; this asynchronous transmitting is no different from the one previously mentioned).

24. With respect to claim 41, Wahl teaches of wherein the third storage system is configured to transmit a read request to the first storage system, and in response to the read request the first storage system is configured to transmit the data and the update information stored in the second storage area to the third storage system (fig. 1, column 10, lines 11-18; where the PMD monitors the writelog device for updates and feeds the data to the mirror device. It is abundantly clear to one of ordinary skill in the art that the PMD issues a read request to read the writelog data into the mirror device. In the combination of Nakano, Hostetter and Wahl, this would be the volume including the bitmap/sequence numbers).

25. With respect to claim 42, Nakano teaches of wherein in case of failure of the first storage system, the data and the update information which are not received by the third storage system but received by the second storage system before the failure, are transmitted from the fourth storage area of the second storage system to the third

storage system (fig. 8, paragraph 0137-0138; In the combination of Nakano, Hostetter and Wahl, they are transmitted from the fourth storage area to the third storage system),

The combination of Nakano, Hostetter and Wahl teaches of the fifth storage area of the third storage system is configured to store the data and the update information received from the second storage system and the sixth storage area of the third storage system is configured to store the data included in the fifth storage area according to the update information included in the fifth storage area as cited and explained with respect to claim 1.

26. With respect to claim 43, the combination of Nakano, Hostetter and Wahl teaches of wherein in the update information read from the second storage area of the first storage system, a number indicating the write order of the data is included (where the sequence numbers and data block numbers taught in Nakano stored in the volume containing the bitmaps from Hostetter are included as previously taught and explained), and

Nakano teaches of wherein in case of a failure of the first storage system, the data and the update information, which the third storage system does not receive from the first storage system, is specified based on a number included in the update information, which the third storage system read from the second storage area of the first storage system (fig. 29, paragraph 0255-0262).

27. With respect to claim 44, the combination of Nakano, Hostetter and Wahl teaches of wherein in case of failure of the first storage system, the data and the update information stored in the fourth storage area of the second storage system are

transmitted to the third storage system (as cited previously with respect to claim 42), and

the data transmitted from the fourth storage area to the third storage system is stored in the sixth storage area of the third storage system in an order related to the write order of the data based on the update information transmitted from the fourth storage area (In the combination of Nakano, Hostetter, and Wahl, as the data is transmitted asynchronously it includes the sequence numbers for proper processing of the data(Nakano, 0138, 0193-0194), thus they are stored in an order related to the write order in the update information. It is abundantly clear to one of ordinary skill in the art that the data would be stored in the sixth area taken from Wahl in the combination).

28. With respect to claim 45, the combination of Nakano, Hostetter and Wahl teaches of wherein the data stored in the fourth storage area of the second storage system, which is transmitted to the third storage system and stored in the sixth storage area of the third storage system in the order related to the write order of the data is received by the second storage system from the first storage system before the failure of the first storage system (Nakano, fig. 8; paragraph 0136-0138, as in normal operation everything in the sub-system 2 is received from sub-system 1 and when there is a failure of sub-system 1, it is no longer sending to sub-system 2, everything sent to sub-system 3 from sub-system 2 must have come from sub-system 1 before it failed).

Allowable Subject Matter

29. Claims 8-11, 14 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

30. The following is a statement of reasons for the indication of allowable subject matter:

c. With respect to claims 8-11, the prior art of Nakano, Hostetter, and Wahl teach of all the limitations of claim 8 as cited with respect to claim 1, except for and ***writes*** the data stored in the fifth storage area ***into*** the sixth storage area according to the update information in the fifth storage area.

d. With respect to claim 14, the prior art of Nakano, Hostetter, and Wahl fails to teach of the data stored in the fifth storage area written in the plurality of sixth storage areas according to the update information stored in the fifth storage area.

31. The examiner would like to note that in the instance that claim 1 is amended to refer to the third storage system (5^{th} and 6^{th} storage areas) as mentioned in claim 8, claim 8 would be objected to as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Response to Arguments

32. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

34. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

35. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Krofcheck whose telephone number is 571-272-8193. The examiner can normally be reached on Monday - Friday.

37. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

38. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Krofcheck

MATTHEW D. ANDERSON
PRIMARY EXAMINER